

CONSTRUCTION '97

A Summary of Occupational Injury and Disease
Alberta Construction Safety Association Industries


Alberta, 1993 to 1997



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1. Introduction

The Mission of Alberta Labour

The mission of Alberta Labour is to work in partnership with Albertans to promote safe and healthy workplaces, a quality working life, and comprehensive safety systems. To this end, Alberta Labour recognizes that monitoring health and safety in Alberta will help to ensure that primary workplace health and safety concerns are actively managed and resources directed where most needed.

This report provides an estimation of the risk of injury or disease (lost-time claim rate) in addition to the descriptive information about the incidents and injured workers in the Alberta Construction Safety Association (ACSA) industries. This report looks at the number of employers that received an external audit and also those that are registered with the ACSA Partners in Injury Reduction (PIR) groups. Cost of injuries and revenue in terms of insurable earning(payroll) and premiums are also presented. Finally, a summary of occupational fatalities accepted by the Workers' Compensation Board (WCB) and descriptions of those fatalities investigated by OHS are provided.

Description of ACSA Industries

The ACSA industries can be subdivided into the following PIR groups of industries: Drywall/Residential Construction, Glaziers, Industrial Construction, Masonry, Mechanical/Electrical/Insulation, Roadbuilders, Roofers, and Scaffolders. For a complete listing of the industry codes for each group, see Appendix B.

Economic Activities in the Construction Sector

There has been an explosion of construction activities across Alberta and it's projected to result in even higher levels of activities over the next decade. Year-end estimate for 1997 indicated that construction volume approximated \$13.1 billion, about 7% increase from that of 1996. The construction markets are seeing a shift into the heavy industrial sector such as oil and gas, forestry and agriculture and related manufacturing industries such as chemical and food processing. Moreover, activities in commercial, institutional, light and residential construction continued to increase.

Industrial construction continued to improve in 1997 with about 9% increase over 1996 volumes to \$639 million. Volumes are expected to increase again in 1998 by another 5% to about \$672 million. Leading the charge of major industrial construction project is Syncrude's gigantic \$6 billion expansion called Syncrude 21 which is expected to provide an equivalent of 2,000 jobs over a period of eight years.

The high level of residential construction activity which began in 1995, continued through 1996 and accelerated even faster during 1997. Residential construction volume grew by 17% in 1997 over the pervious year to over \$3.9 billion. This volume is expected to grow at least another 9% in 1998 to an Alberta record of more than \$4.2 billion.

Though commercial construction activity was 11% higher in 1997 than the previous year, reaching \$615 million, this sector is not yet being influenced by the positive growth signs. Commercial construction activity is expected to take a slight dip in 1998 by approximately 1.5%.

Despite the fact that construction currently employs between 90,000 to 100,000 Albertans, the upward curve in construction activities has lead to increased levels of construction employment, resulting in the shortage of skilled and competent workers for the sector. This lack of skilled labour may spark an increase in job-related injuries across the province thereby sharply reversing the downward trend in work-related injuries throughout the 1990's.

2. Lost time Claim(LTC) & Duration Rates

2.1 All ACSA Industries

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	19,411	\$20,528,590	80,585	185,913	231	4,337	5.4
1994	20,632	\$17,652,289	81,292	161,420	199	3,947	4.9
1995	21,676	\$19,504,948	77,187	158,799	206	3,770	4.9
1996	22,694	\$19,871,656	85,640	170,335	199	4,276	5.0
1997	25,407	\$26,588,048	110,003	225,152	205	5,666	5.2

2.2 Partners in Injury Prevention (PIR) Groups of Industries

Drywall/Residential Construction

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	7,938	\$6,758,191	20,017	64,508	322	1,326	6.6
1994	8,391	\$4,890,179	19,527	50,259	257	1,199	6.1
1995	8,772	\$4,832,887	18,356	47,719	260	1,029	5.6
1996	9,061	\$4,702,062	20,993	51,180	244	1,194	5.7
1997	9,728	\$7,648,210	26,140	73,430	281	1,544	5.9

Glaziers

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	467	\$698,756	4,103	6,703	163	272	6.6
1994	453	\$523,620	4,244	5,074	120	208	4.9
1995	464	\$362,342	3,871	3,792	98	192	5.0
1996	461	\$588,497	4,451	6,270	141	312	7.0
1997	476	\$868,050	5,565	8,154	147	442	7.9

Industrial Construction

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	3,637	\$4,785,282	18,785	38,953	207	928	4.9
1994	4,050	\$3,432,758	17,192	31,336	182	801	4.7
1995	4,420	\$4,505,230	17,513	35,174	201	912	5.2
1996	4,687	\$3,986,898	20,213	35,458	175	991	4.9
1997	5,588	\$5,085,611	25,145	44,579	177	1,308	5.2

Masonry

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	210	\$410,415	738	3,820	518	78	10.6
1994	212	\$156,261	603	1,747	290	47	7.8
1995	213	\$154,319	548	1,613	295	43	7.9
1996	208	\$174,651	559	1,809	324	48	8.6
1997	203	\$252,591	650	2,573	396	60	9.2

Mechanical/Electrical/Insulation

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	2,735	\$2,655,011	15,727	23,716	151	745	4.7
1994	2,808	\$2,139,564	14,145	18,740	132	607	4.3
1995	2,954	\$2,468,569	14,010	17,119	122	613	4.4
1996	3,072	\$2,323,574	14,943	19,942	133	667	4.5
1997	3,507	\$3,013,886	20,956	22,722	108	808	3.9

Roadbuilders

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	3,711	\$3,724,666	17,975	34,007	189	714	4.0
1994	3,977	\$5,188,382	22,661	42,661	188	854	3.8
1995	4,105	\$6,331,220	20,061	43,826	218	764	3.8
1996	4,389	\$6,741,452	21,105	42,787	203	852	4.0
1997	4,992	\$7,398,186	27,146	54,937	202	1,172	4.3

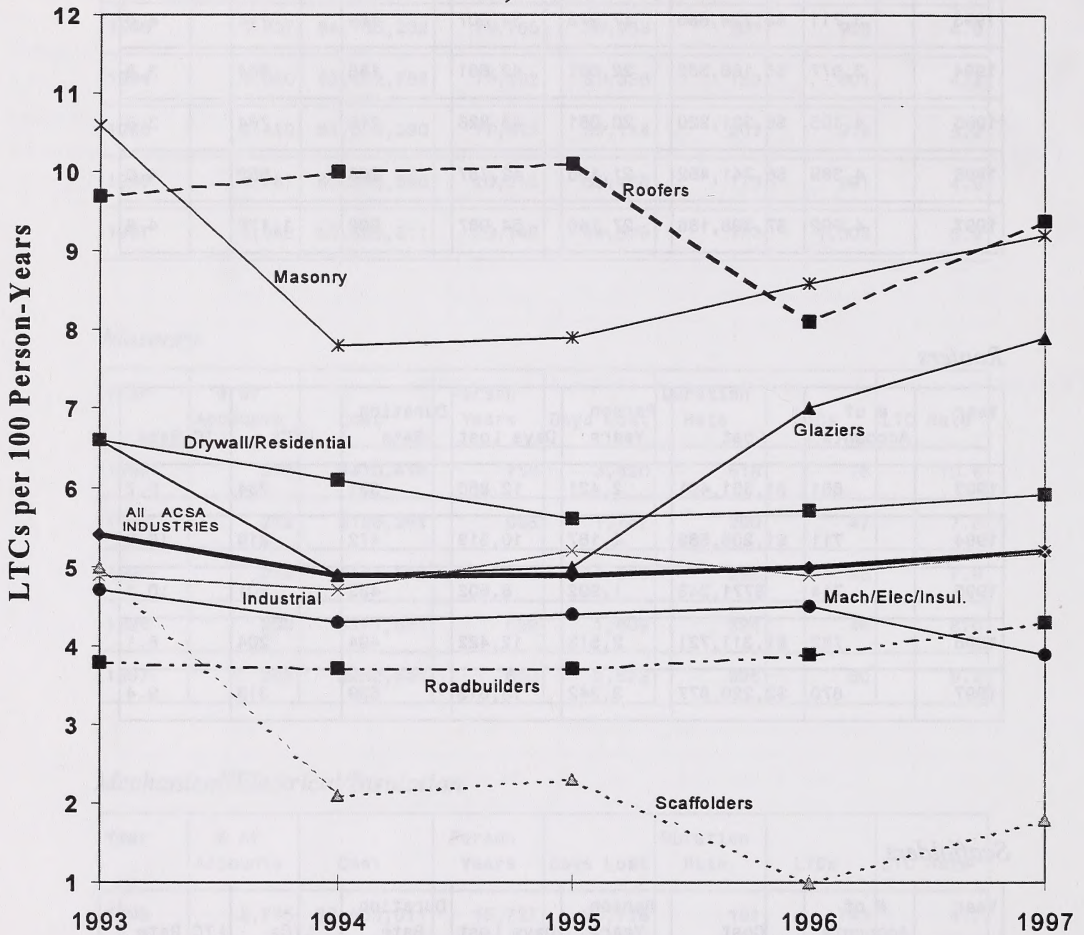
Roofers

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	681	\$1,351,401	2,421	12,850	531	234	9.7
1994	711	\$1,206,589	2,187	10,319	472	219	10.0
1995	714	\$771,243	1,992	8,602	432	201	10.1
1996	782	\$1,311,721	2,513	12,422	494	204	8.1
1997	870	\$2,220,877	3,342	18,015	539	313	9.4

Scaffolders

Year	# of Accounts	Cost	Person Years	Days Lost	Duration Rate	LTCs	LTC Rate
1993	32	\$144,869	819	1,356	166	41	5.0
1994	30	\$114,938	732	1,284	N/A	15	2.1
1995	34	\$79,138	836	954	N/A	19	2.3
1996	34	\$42,801	864	467	N/A	9	1.0
1997	43	\$100,638	1,058	742	N/A	19	1.8

LTC Rates for All ACSA Industries and PIR Groups of Industries Alberta, 1993-1997



Lost-Time Claim Rates	1993	1994	1995	1996	1997
ALL ACSA INDUSTRIES	5.4	4.9	4.9	5.0	5.2
Drywall/Residential Construction	6.6	6.1	5.6	5.7	5.9
Glaziers	6.6	4.9	5.0	7.0	7.9
Industrial Construction	4.9	4.7	5.2	4.9	5.2
Masonry	10.6	7.8	7.9	8.6	9.2
Mech/Electrical/Insulation	4.7	4.3	4.4	4.5	3.9
Roadbuilders	3.8	3.7	3.7	3.9	4.3
Roofers	9.7	10.0	10.1	8.1	9.4
Scaffolders	5.0	2.1	2.3	1.0	1.8

2.3 LTC Rates of all ACSA Industries by Size¹ of Employer: 1997 Only

Size of Employer	# of Accounts	LTCs	Person Years	LTC Rate
A: 0< PYs <=1	13,061	419	6,164	6.8
B: 1 < PYs < 5	6,671	911	15,303	6.0
C: 5 <= PYs < 10	1,647	632	11,449	5.5
D: 10 <= PYs < 20	1,107	852	15,273	5.6
E: 20 <= PYs < 50	714	1,221	22,111	5.5
F: 50 <= PYs < 100	209	669	14,640	4.6
G: PYs >=100	118	927	25,064	3.7
H: Invalid	1,880	35	0	N/A
Total	25,407	5,666	110,003	5.2

¹ Size is measured in terms of estimated person-years

3. Analysis of the Lost-time Claims for All ACSA Industries

3.1 Nature of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
SPRAIN,STRAIN	1,827	1,619	1,462	1,603	2,246	8,757	39.8
FRACTURE & DISLOCATION	619	536	560	621	958	3,294	15.0
CUT,LACERATION,PUNCTURE	507	514	475	519	699	2,714	12.3
BRUISE,CONTUSION,CRUSHING	421	418	414	529	596	2,378	10.8
OTHER INJURY	127	83	111	289	406	1,016	4.6
SCRATCH,ABRASION	119	108	105	148	155	635	2.9
INFLAMED/IRRITATED JOINTS,ETC.	151	104	125	87	129	596	2.7
OTHER DISEASE	81	82	91	131	149	534	2.4
MULTIPLE INJURIES	110	80	92	40	40	362	1.6
ALL OTHER NATURES, UNS	375	403	335	309	288	1710	7.8
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

3.2 Part of Body Affected

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
BACK	1,216	1,064	951	1,056	1,374	5,661	25.7
ANKLE(S) & FOOT(FEET)-NOT TOES	510	472	429	483	693	2,587	11.8
OTHER TRUNK	448	431	446	515	668	2,508	11.4
FINGER(S)	422	384	391	470	597	2,264	10.3
LEG(S)	416	427	382	435	598	2,258	10.3
WRIST(S) & HAND(S)-NOT FINGERS	427	405	374	377	549	2,132	9.7
ARM(S) (ABOVE WRIST)	252	189	213	223	277	1,154	5.2
OTHER HEAD, NECK	212	187	203	204	282	1,088	4.9
EYE(S) -OPTIC NERVE,VISION	151	164	140	174	215	844	3.8
MULTIPLE MAJOR BODY PARTS	118	74	93	158	159	602	2.7
FACE	52	53	58	53	78	294	1.3
TOE(S)	53	37	32	38	54	214	1.0
UPPER EXTREMITIES-MULTIPLE	19	13	9	27	61	129	0.6
LOWER EXTREMITIES-MULTIPLE	17	8	13	33	32	103	0.5
RESPIRATORY SYSTEM	9	14	21	8	5	57	0.3
BODY SYSTEMS (NOT RESP.)	5	12	8	8	11	44	0.2
PART OF BODY-NEC,UNS	6	7	3	10	10	36	0.2
UPPER EXTREMITIES-NEC,UNS	2	2	.	3	2	9	0.0
LOWER EXTREMITIES-NEC,UNS	2	3	1	.	.	6	0.0
NONPERSONAL (EG. EYEGLASSES)	.	1	3	1	1	6	0.0
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

3.3 Source of Injury

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
SOURCE-UNS	681	646	715	986	911	3,939	17.9
WORKING SURFACES	684	547	558	572	911	3,272	14.9
METAL ITEMS-NEC	505	481	463	421	666	2,536	11.5
BODILY MOTION	559	475	426	432	635	2,527	11.5
VEHICLES	213	234	216	239	260	1,162	5.3
HANDTOOLS-UNPOWERED	199	201	206	205	244	1,055	4.8
BOXES, CONTAINERS	205	161	154	157	204	881	4.0
MACHINES	135	106	127	177	245	790	3.6
WOOD ITEMS-NEC	176	163	97	139	183	758	3.4
HANDTOOLS-POWERED	130	180	121	125	181	737	3.4
BUILDINGS, STRUCTURES	130	97	82	126	186	621	2.8
ALL OTHER SOURCES	720	656	605	697	1,040	3,718	16.9
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

3.4 Type of Event

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
OVEREXERTION	1,040	893	796	814	1,108	4,651	21.1
STRUCK BY	571	642	575	675	1,009	3,472	15.8
FALL FROM ELEVATION	624	535	562	580	893	3,194	14.5
BODILY REACTION	559	473	422	440	610	2,504	11.4
EVENT TYPE-UNS	393	361	407	674	635	2,470	11.2
FALL ON SAME LEVEL	246	211	202	259	307	1,225	5.6
CAUGHT IN, UNDER OR BETWEEN	224	218	234	208	297	1,181	5.4
STRUCK AGAINST	220	157	169	204	311	1,061	4.8
RUBBED OR ABRADED	195	175	143	119	145	777	3.5
VEHICLE INCIDENTS	110	108	122	141	140	621	2.8
TEMPERATURE EXTREMES	78	68	43	61	76	326	1.5
CONTACT NOXIOUS SUBSTANCE	47	65	59	60	82	313	1.4
EVENT TYPE-NEC	30	41	36	41	53	201	0.9
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

3.5 Occupation of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
CONSTRUCTION OCCUPATIONS	2,450	1,999	1,924	1,863	2,655	10,891	49.5
OCCUPATION-UNS	519	644	650	1,090	952	3,855	17.5
MACHINING	367	332	316	328	458	1,801	8.2
OCCUPATION-NEC	231	209	190	255	425	1,310	6.0
FABRICATING, REPAIR	253	224	206	214	328	1,225	5.6
TRANSPORT OPERATORS	144	140	134	129	191	738	3.4
MATERIALS HANDLING-NEC	101	118	95	106	189	609	2.8
FARMING, FISHING & HUNTING	73	75	62	77	115	402	1.8
PROCESSING	65	61	46	63	79	314	1.4
CLERICAL	32	25	35	30	83	205	0.9
OIL & GAS FIELD, MINING	26	44	27	24	52	173	0.8
FORESTRY & LOGGING	20	21	22	24	56	143	0.7
SERVICE OCCUPATIONS	22	19	18	27	27	113	0.5
PROFESSIONAL	9	11	17	13	26	76	0.3
SALES	10	10	8	15	12	55	0.3
MANAGERIAL, ADMINISTRATIVE	10	10	11	11	12	54	0.2
CRAFTS, EQUIP. OPERATING-NEC	5	5	9	7	6	32	0.1
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

3.6 Duration of Disability

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
01 - 05 DAYS LOST	1,206	1,062	1,024	1,243	1,648	6,183	28.1
06 - 10 DAYS LOST	609	593	482	536	806	3,026	13.8
11 - 15 DAYS LOST	362	311	299	363	438	1,773	8.1
16 - 20 DAYS LOST	251	212	216	240	326	1,245	5.7
21 - 30 DAYS LOST	318	295	312	357	446	1,728	7.9
31 - 40 DAYS LOST	218	228	228	224	318	1,216	5.5
41 - 50 DAYS LOST	175	213	165	209	259	1,021	4.6
51 OR MORE DAYS LOST	1,161	987	969	1,023	1,309	5,449	24.8
DAYS LOST-UNSPECIFIED, 0	37	46	75	81	116	355	1.6
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

4. Characteristics of the Injured Worker

4.1 Age of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
15-19 YEARS	187	196	172	223	391	1,169	5.3
20-24 YEARS	701	675	586	652	943	3,557	16.2
25-34 YEARS	1,624	1,435	1,259	1,469	1,799	7,586	34.5
35-44 YEARS	1,068	960	993	1,127	1,463	5,611	25.5
45-54 YEARS	504	445	480	556	701	2,686	12.2
55-64 YEARS	227	202	250	230	329	1,238	5.6
65 YRS AND OVER	8	23	21	15	30	97	0.4
AGE-UNSPECIFIED	18	11	9	4	10	52	0.2
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

4.2 Gender of Injured Worker

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
MALE	4,187	3,796	3,631	4,034	5,310	20,958	95.3
FEMALE	102	122	105	115	211	655	3.0
GENDER-UNSPECIFIED	48	29	34	127	145	383	1.7
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

4.3 Length of Time Employed

LOST-TIME CLAIMS ALBERTA: 1993 TO 1997	OCCURRENCE YEAR					Total	
	93	94	95	96	97	Number	Percent
A. LESS THAN 1 MONTH	738	732	678	629	945	3,722	16.9
B. 1 MONTH TO < 6 MONTHS	1,230	1,089	995	965	1,500	5,779	26.3
C. 6 MONTHS TO < 1 YEAR	421	375	338	309	535	1,978	9.0
D. 1 YEAR OR MORE	1,208	1,042	1,003	941	1,076	5,270	24.0
E. TIME-UNSPECIFIED	740	709	756	1,432	1,610	5,247	23.9
Total	4,337	3,947	3,770	4,276	5,666	21,996	100.0

5. Number of Employers that received/renewed a Certificate of Recognition in 1997

ACSA PIR Group of Industries	Certified Employers	Cert. & Uncert. (# of Accounts)	% Certified
1. Drywall/Residential Construction	28	9,728	0.3
2. Glaziers	3	476	0.6
3. Industrial Construction	60	5,588	1.1
4. Masonry	1	203	0.5
5. Mechanical/Electrical/Insulation	45	3,507	1.3
6. Roadbuilders	143	4,992	2.9
7. Roofers	16	870	1.8
8. Scaffolders	2	43	4.7
All ACSA Industries	298	25,407	1.2

6. Number of Employers in the ACSA PIR Groups: Alberta, 1997

ACSA PIR Group of Industries	Registered Employers	Cert. & Uncert. (# of Accounts)	% Registered
1. Drywall/Residential Construction	74	9,728	0.8
2. Glaziers	13	476	2.7
3. Industrial Construction	149	5,588	2.7
4. Masonry	4	203	2.0
5. Mechanical/Electrical/Insulation	102	3,507	2.9
6. Roadbuilders	281	4,992	5.6
7. Roofers	39	870	4.5
8. Scaffolders	10	43	23.3
All ACSA Industries	672	25,407	2.6

7. Cost of Claims, Payroll, & Premiums

7.1 All ACSA Industries Cost

		Occurrence Year				
		1993	1994	1995	1996	1997
Transaction Year						
1993	\$15,644,297					
1994	\$13,427,652	\$13,372,664				
1995	\$10,904,676	\$12,325,364	\$15,272,028			
1996	\$5,439,821	\$6,158,892	\$11,825,057	\$14,421,689		
1997	\$3,999,256	\$5,687,100	\$5,275,574	\$12,952,535	\$19,831,161	
Total Cost	\$49,415,702	\$37,544,020	\$32,372,658	\$27,374,224	\$19,831,161	

Total Payroll	\$2,244,822,424	\$2,235,129,215	\$2,224,873,536	\$2,473,386,667	\$2,889,123,261
Total Premiums	\$109,255,394	\$105,427,474	\$98,729,889	\$94,328,622	\$97,376,944

The above cost for claims, total payroll, and total premiums are for the five year period 1993 through 1997. The data is as of April 14, 1998.

The claim cost amount reflect only 'paid or current' cost on claims which have occurred in the five year period. These cost are tracked by the occurrence year and year that the cost were transacted. These cost are incomplete in that a workers compensation claim may take many years to be closed.

The total payroll have been totalled for each year. The premium is the total of employer's premium paid for each year.

7.2 Partners in Injury Reduction (PIR) Groups Cost

Drywall/Residential Construction

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$5,022,570				
1994	\$4,619,465	\$3,611,625			
1995	\$4,813,020	\$3,750,892	\$3,618,162		
1996	\$1,768,580	\$1,686,414	\$3,557,414	\$3,455,506	
1997	\$1,744,755	\$1,782,089	\$1,024,014	\$3,278,822	\$5,592,070
Total Cost	\$17,968,390	\$10,831,020	\$8,199,590	\$6,734,328	\$5,592,070

Total Payroll \$487,508,515 \$473,698,532 \$438,959,546 \$494,347,471 \$569,563,009

Total Premiums \$25,299,155 \$24,062,844 \$21,544,588 \$21,464,998 \$22,465,742

Glaziers

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$535,946				
1994	\$422,865	\$433,387			
1995	\$317,435	\$266,231	\$290,380		
1996	\$190,194	\$172,210	\$268,622	\$438,333	
1997	\$107,954	\$157,375	\$85,029	\$375,326	\$648,131
Total Cost	\$1,574,395	\$1,029,203	\$644,031	\$813,658	\$648,131

Total Payroll \$94,645,904 \$92,538,175 \$90,400,405 \$100,623,626 \$105,704,597

Total Premiums \$3,800,967 \$4,012,881 \$3,594,328 \$3,332,389 \$2,828,583

Industrial Construction

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$3,827,306				
1994	\$2,619,136	\$2,436,731			
1995	\$1,835,388	\$2,526,972	\$3,575,231		
1996	\$913,852	\$1,748,517	\$2,649,843	\$2,888,406	
1997	\$600,465	\$1,186,818	\$2,321,436	\$2,601,193	\$3,437,826
Total Cost	\$9,796,147	\$7,899,039	\$8,546,509	\$5,489,599	\$3,437,826

Total Payroll \$530,526,057 \$467,788,180 \$503,766,324 \$549,631,193 \$661,645,801

Total Premiums \$28,178,614 \$24,371,729 \$24,358,596 \$23,133,379 \$23,765,341

Masonry

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$282,475				
1994	\$282,865	\$109,558			
1995	\$160,596	\$124,203	\$113,897		
1996	\$98,382	\$20,797	\$176,439	\$115,716	
1997	\$119,435	\$35,675	\$27,037	\$380,617	\$171,089
Total Cost	\$943,754	\$290,233	\$317,373	\$496,333	\$171,089

Total Payroll \$21,200,390 \$17,149,829 \$16,373,544 \$17,089,616 \$20,263,808

Total Premiums \$1,666,268 \$1,343,428 \$1,289,062 \$1,209,256 \$1,294,225

Mechanical/Electrical/Insulation

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$2,151,681				
1994	\$1,787,828	\$1,738,786			
1995	\$1,171,390	\$1,832,893	\$1,768,929		
1996	\$984,464	\$782,114	\$1,752,742	\$1,764,524	
1997	\$405,240	\$697,805	\$504,490	\$1,597,868	\$2,180,485
Total Cost	\$6,500,603	\$5,051,597	\$4,026,161	\$3,362,392	\$2,180,485

Total Payroll \$480,340,896 \$433,526,893 \$440,775,430 \$490,640,419 \$568,687,435

Total Premiums \$16,548,253 \$14,378,753 \$14,325,808 \$14,428,658 \$14,566,347

Roadbuilders

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$2,815,898				
1994	\$2,319,395	\$4,131,207			
1995	\$1,991,352	\$2,786,640	\$5,233,590		
1996	\$896,904	\$1,167,654	\$2,834,599	\$4,755,828	
1997	\$856,617	\$1,445,051	\$1,072,238	\$3,673,711	\$5,968,337
Total Cost	\$8,880,165	\$9,530,552	\$9,140,427	\$8,429,539	\$5,968,337

Total Payroll \$547,064,919 \$676,617,500 \$661,346,095 \$701,207,700 \$860,567,290

Total Premiums \$26,566,944 \$31,080,306 \$27,886,146 \$24,790,950 \$25,466,587

Roofers

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$907,994				
1994	\$1,260,040	\$816,779			
1995	\$547,514	\$960,904	\$629,250		
1996	\$459,498	\$534,620	\$494,895	\$971,952	
1997	\$136,818	\$372,111	\$177,548	\$1,019,356	\$1,757,186
Total Cost	\$3,311,864	\$2,684,414	\$1,301,693	\$1,991,308	\$1,757,186

Total Payroll	\$63,451,936	\$55,952,483	\$51,079,418	\$97,630,621	\$73,672,958
Total Premiums	\$6,136,285	\$5,239,310	\$4,748,020	\$5,130,358	\$6,080,981

Scaffolders

	Occurrence Year				
	1993	1994	1995	1996	1997
Transaction Year					
1993	\$100,426				
1994	\$116,058	\$94,591			
1995	\$67,980	\$76,628	\$42,589		
1996	\$127,948	\$46,567	\$90,502	\$31,424	
1997	\$27,973	\$10,176	\$63,781	\$25,642	\$76,036
Total Cost	\$440,385	\$227,962	\$196,872	\$57,066	\$76,036

Total Payroll	\$20,083,807	\$17,857,623	\$22,172,774	\$22,216,021	\$29,018,363
Total Premiums	\$1,058,908	\$938,223	\$983,341	\$838,635	\$909,137

8. Occupational Fatalities

An occupational fatality is the death of a worker which results from work-related incident or exposure. Alberta Labour classifies occupational fatalities into three general types: motor vehicle incidents, workplace incident, and occupational disease. Each of the three is described in detail below.

Motor Vehicle Incidents

Motor vehicle incidents typically involve highway vehicle operating on public roads in which the fatally injured worker was either the driver or a passenger. Fatal motor vehicle incidents are as likely to be single vehicle crashes as they are to be collision with other vehicles.

Workplace Incidents

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a worksite. It is this type of fatality that Alberta labour may be responsible for investigating.

Occupational Disease

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related. (eg. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. This category, then, should not be interpreted to reflect the present work site hazardous conditions.

Each year the WCB accepts some occupational fatality claims for compensation. Fatality claims accepted in a year does not imply all the fatalities or exposure occurred in that year.

Description of WCB Accepted Fatalities Combined ACSA Industries Alberta, 1992 to 1997

Year	Occupational Disease		Motor Vehicle incident		Workplace Incident		Total	
	N	%	N	%	N	%	N	%
1992	11	39.3	4	14.3	13	46.4	28	100
1993	5	26.3	4	21.1	10	52.6	19	100
1994	1	7.1	3	21.4	10	71.4	14	100
1995	6	22.2	9	33.3	12	44.4	27	100
1996	5	23.8	7	33.3	9	42.9	21	100
1997	7	29.2	8	33.3	9	37.5	24	100
Total	35	26.3	35	26.3	63	47.4	133	100

9. OHS Investigated Occupational Fatalities: Alberta, 1993 to 1997

Drywall/Residential Construction (4)

YEAR:	1995	FILE:	0802
OCCUPATION:	Truck Driver	AGE:	19
INDUSTRY:	Residential Construction		
EXPERIENCE:	1 Year		

DESCRIPTION: A worker was installing OSB sheathing on a flat roof of a 4 story condominium. The worker was retrieving a skill saw from the other end of the roof when he fell down an open elevator shaft. A second worker was on a temporary work platform in the shaft 7.6 metres below the roof. The worker falling from the roof tipped the platform and both workers fell the remaining 9.6 metres to the bottom of the elevator shaft. Investigators were unable to determine the immediate cause of this accident.

YEAR:	1995	FILE:	0804
OCCUPATION:	Carpenter	AGE:	24
INDUSTRY:	Construction of Houses & Apartments		
EXPERIENCE:	4 months		

DESCRIPTION: Barn rafters, constructed of 2x6" machine stress lumber, measuring approximately 50' in length by 8' in height were used to construct a boiler barn. One rafter was placed in position and a 9' long 2"x6" prop board was positioned on the ground in such a way that it would support the rafters in an upright position. The ground was not, level, therefore the rafters were lifted slightly, manually, and levelling boards were placed beneath the ends of the rafters. The rafters were raised into upright position when the prop board slipped and the seven rafters fell to the ground. A worker was unable to get out of the path of the falling rafters and was knocked to the ground. He hit his head on the frozen ground which rendered him unconscious. The worker did not regain consciousness and died of his injuries.

YEAR:	1995	FILE:	0816
OCCUPATION:	Homebuilder/Framer	AGE:	42
INDUSTRY:	Residential Construction		
EXPERIENCE:	20 years		

DESCRIPTION: Two residential framers built an on-site temporary scaffold, to allow them to lift up roof trusses and lay them on the scaffold flat, prior to setting them into position. The scaffold was built from 38 x 39 mm. spruce lumber uprights. Two planks were used for walking on and to support roof trusses.

After the scaffold was completed, one framer went up onto it while the other framer remained on the outside of the house and rigged up four of the roof trusses which were to be lifted by the crane into position. The trusses that were lifted onto the scaffold were then unhooked by the worker, who had to walk along the planks. Once lifted to the roof, the ends of the trusses were to rest on the walls and be supported in the middle by the temporary scaffold. This was carried out without any incident. On the next lift six trusses were lifted. The six trusses were hoisted into position, then unhooked. The framer on the scaffold was working directly above a floor opening of 2.5 x 2 m. when the scaffold collapsed. This caused the worker to fall an additional 2.4 m. into the basement, a total distance of 6 m., fatally injuring him.

YEAR:	1997	FILE:	0856
OCCUPATION:	Arborist	AGE:	33
INDUSTRY:	Landscaping, including Maintenance		
EXPERIENCE:	1.5 years		

DESCRIPTION: A self employed contractor was in the process of trimming tree tops and branches for a private residential owner using a truck mounted man-lift. The contractor had located his truck unit in the alley-way to the rear of the residence and had manoeuvred his man-bucket through a space of approximately 150cm (5 feet) between primary and secondary overhead power lines. Upon completing the trimming of one tree he was relocating his bucket to a position to allow him to trim a second. It was during this repositioning that it appears he backed the man/bucket towards a 14KVA power line and came into contact with it and was electrocuted.

Glaziers (0)

There was no OHS investigated occupational fatalities for the period 1993 to 1997.

Industrial Construction (10)

1993-1995: 5 OHS INVESTIGATED OCCUPATIONAL FATALITIES

YEAR:	1996	FILE:	0830
OCCUPATION:	Labourer - Machinery Industry	AGE:	54
INDUSTRY:	Machinery/Equipment - Sale, Service and Repair		
EXPERIENCE:	8 months with employer		

DESCRIPTION: The worker was employed as a labourer in a machining shop. In the course of walking across the shop floor, the worker crossed the path of a forklift which was loading a delivery truck with oilfield valves and accessories. The operator of the forklift saw the worker and slammed on the brakes, but struck the worker and skidded approximately 2 and half metres, pinning the worker to a steel table which was bolted to the floor. The crushing between the forklift and the metal table caused fatal injuries.

YEAR:	1996	FILE:	0839
OCCUPATION:	Labourer - Building Construction	AGE:	60
INDUSTRY:	Industrial/Commercial Construction		
EXPERIENCE:	Unspecified		

DESCRIPTION: A worker employed by Coram Construction, was killed on an industrial construction site when struck by falling joists and metal sheeting. He and another worker were working earlier in the area to remove some standing water with water pumps. When ironworkers began to place bundles of corrugated steel sheeting on metal roof joists above the workers, the two were directed to leave the area. Sometime later, without checking with the ironworkers, the worker felt it was safe to return to the area and did so. Subsequently the joists appeared to slip. Three joists and the bundles of sheeting fell 11 metres and struck the worker inflicting fatal injuries.

YEAR:	1996	FILE:	0850
OCCUPATION:	Labourer	AGE:	44
INDUSTRY:	Commercial/Institutional/Commercial Construction		
EXPERIENCE:	5 years with this employer		

DESCRIPTION: The worker was removing snow from the upper roof deck of a steel building which was under construction. He was using a 12.5 horsepower gasoline-powered snow sweeper and he had made one pass along the east edge of the roof in a north to south direction. The worker was approximately one metre from the edge of the roof as he operated the equipment. It is believed that in the course of attempting a right hand turn to make a second pass along the roof, the worker and the snow sweeper fell over the edge of the roof.

YEAR:	1997	FILE:	0864
OCCUPATION:	Ironworker	AGE:	41
INDUSTRY:	Structural Steel Erection		
EXPERIENCE:	22 years		

DESCRIPTION: A large warehouse style building was being constructed at a construction site in southeast Calgary. The crew were erecting roof and crane beams on gridlines on 1 to 4 and beamlines A to D. They had completed erecting all the beams on gridline 1 and had erected the roof beams leaving a tie beam to be put between 2B and 2C. The crane beams were erected and the two ironworkers were standing on the crane beam waiting for the crane to lift the tie beam into position, when column 2C began to fall towards gridline 1. The columns were all interconnected by the crane beams and all of them fell to the ground along with the two workers. One ironworker was fatally injured and his colleague suffered the loss of a portion of his leg.

YEAR:	1997	FILE:	0883
OCCUPATION:		AGE:	55
INDUSTRY:	Mach/Equip. Heavy, Inst/Svce		
EXPERIENCE:			

DESCRIPTION: A worker dies as a result of injuries sustained from a fall off a lumber transfer deck at a saw mill.

Masonry (0)

There were no OHS investigated occupational fatalities for the period 1993 to 1997.

Mechanical/Electrical/Insulation (2)

YEAR:	1995	FILE:	0813
OCCUPATION:	Elevator Constructor	AGE:	41
INDUSTRY:	Install Elevators and Escalators		
EXPERIENCE:			

DESCRIPTION: A licensed mechanic was asked to repair escalators at a Mall in Calgary. Two helpers had removed most of the decking off the escalator. Since the worker did not need any more assistance, the other workers started working on the second escalator. The worker had removed the skirting angles and had indicated that he was going to loosen the handrail tension sheaves to get the handrail off the first escalator. While working on the second escalator, the other workers heard a

scream from the first escalator. One of the helpers stopped the first escalator with the emergency stop button located at the bottom of the escalator. The worker was crushed against the upper landing plate of the escalator and fatally injured. The worker had originally turned the equipment off and subsequently reactivated it, to jog the escalator in order to remove the handrail drive chain.

YEAR:	1997	FILE:	0861
OCCUPATION:	Plumber	AGE:	41
INDUSTRY:	Mechanical Contracting (Plumbing, Steam, Gas Fitting)		
EXPERIENCE:	10 years		

DESCRIPTION: A 2.28 metre deep trench was excavated for the purpose of installing a water and sewer pipeline. The plumber entered the trench and walked about 15 metres to where the water pipeline was being uncoiled and installed. The backhoe was in operation about 3 metres from the uncoiled water pipeline. The plumber was turning back when a large slab of earth dislodged from the trench wall and struck him, burying him from the chest down. The backhoe operator and the plumber's neighbour uncovered the plumber who was semi-conscious. The plumber died of internal injuries at Foothills Hospital in Calgary.

Road builders (25)

1993-1996: 19 OHS INVESTIGATED OCCUPATIONAL FATALITIES

YEAR:	1997	FILE:	0865
OCCUPATION:	Roller Operator	AGE:	37
INDUSTRY:	Paving & Surfacing		
EXPERIENCE:	13 months over a 3-year period		

DESCRIPTION: A paving crew was in the process of paving a section of highway situated on a hill in Northwestern Alberta. The worker was operating a self-propelled pneumatic roller, in a set pattern, throughout the day. The worker arrived at the end of the rolling pattern, at the top end of new pavement on the hill. The worker's mobile equipment stalled and started to roll backwards. The worker was unable to gain control as the equipment rolled down hill. The packer skidded into the ditch causing it to roll over. The worker was not wearing a seat belt and was thrown over 30 m off the machine causing fatal injuries.

YEAR:	1997	FILE:	0867
OCCUPATION:		AGE:	27
INDUSTRY:	Mobile Equip. Operations,/Road Construction/Land Clearing		
EXPERIENCE:			

YEAR:	1997	FILE:	0867
OCCUPATION:		AGE:	20
INDUSTRY:	Mobile Equip. Operations,/Road Construction/Land Clearing		
EXPERIENCE:			

DESCRIPTION: The two workers were killed when a trailer and its load of gravel fell onto a crusher operator's shack where they were working. The trailer box was in a raised position, unloading its content into a crusher vat, when it tipped over.

YEAR:	1997	FILE:	0870
OCCUPATION:	Welder (semi-retired)	AGE:	55
INDUSTRY:	Mobile Equipment Operations,/Road Construction/Land Clearing		
EXPERIENCE:	n/a		

DESCRIPTION: The workers were in the process of installing a municipal water and sewer service in a 2.8 metre deep straight cut trench to a residence in northwest Alberta rural municipality. The worker placed the earth removed from the excavation on the immediate south wall of the trench. Access and egress to the trench was supplied by a single ladder. The south wall of the trench caved in, pinning a worker under approximately 0.8 metres of dirt and fatally injuring him. The contributing factors were the lack of proper cutback, no shoring and the location of the spoil pile on the trench bank.

YEAR:	1997	FILE:	0871
OCCUPATION:	Truck & Gravel Pit Owner	AGE:	62
INDUSTRY:	Mobile equipment Operations/Road Construction/Land Clearing/Demolition		
EXPERIENCE:	40 years		

DESCRIPTION: The operator was servicing a conveyor on a screener at a gravel pit. The operator had opened the guard doors and was applying belt dressing as a temporary measure to the conveyor belt as it had been slipping. The unit was operating and his clothing and arm got caught by a drive sprocket, fatally injuring him.

YEAR:	1997	FILE:	0875
OCCUPATION:		AGE:	58
INDUSTRY:	Mobile equipment Operations/Road Construction/Land Clearing/Demolition		
EXPERIENCE:			

DESCRIPTION: A worker was killed at a road construction site when he touched a truck which had contacted a 14,000-volt overhead powerline. The driver of a gravel truck was unloading gravel when the box came in contact with a powerline. The worker ran to the truck to assist the driver. He was fatally electrocuted when he touched the cab of the truck.

Roofers (4)

YEAR:	1993	FILE:	0779
OCCUPATION:	Roofer	AGE:	40
INDUSTRY:	Roofing		
EXPERIENCE:	11 years (approx.)		

DESCRIPTION: A roofer working alone fell from a roof landing on the ground 4.26 metres below. The worker died in hospital three weeks later from the injuries received from the fall. The worker had not been wearing any fall protection while working on the roof. When he started the job early in the morning weather conditions were sunny and dry. Prior to the accident conditions became worse--snow began falling making the roof slippery. The worker was in the process of putting the last 6 metres of starter metal on the edge of the roof when he fell 4.26 metres to the ground below sustaining injuries which were not considered life threatening at the time. .

YEAR:	1994	FILE:	0780
OCCUPATION:	Rofer	AGE:	28
INDUSTRY:	Roofing		
EXPERIENCE:	at least 5 years		

DESCRIPTION: While sweeping the snow and frost from the roof of a new senior citizens residence in Calgary, a worker fell approximately 12.5 m to the ground sustaining fatal injuries. The investigators concluded that the worker fell from the roof because he was not provided with and was not using any form of fall protection, particularly in light of the slippery conditions that existed from the snow and frost on the roof at the time.

YEAR:	1997	FILE:	0866
OCCUPATION:	Carpenter	AGE:	24
INDUSTRY:	Roofing		
EXPERIENCE:	Unspecified		

DESCRIPTION: As part of the house construction, the fascia and windows on the north side of the house had been installed. The contractor decided that the scaffold should be moved from the north to the south side of the house, using the driveway as an unobstructed path. The three workers and the site owner proceeded to move the 4-tier scaffold. As the scaffolding began to move, the owner was distracted by a neighbour's call and released her grip on the scaffold. The upper poles of the scaffold made contact with the neutral ground wire and then the high voltage wire that ran parallel to the driveway. One worker was fatally injured due to electrocution.

YEAR:	1997	FILE:	0880
OCCUPATION:		AGE:	54
INDUSTRY:	Roofing		
EXPERIENCE:			

DESCRIPTION: A worker was killed in Edmonton when he fell 8 metres from the roof of a warehouse. He had been using a power broom to sweep gravel away in order to make repairs, when he back up and tripped over the lip of the roof.

Scaffolders (0)

There were on OHS investigated occupational fatality for the period 1993 to 1997.

Appendix A : Terms, Definitions and Formulas

Lost-Time Claim(LTC)	A lost-time claim (LTC) is the claim for an occupational injury or disease which disables the worker beyond the day of injury. Included are the claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.
Person-Years	Person-years estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Labour uses these data to estimate an average industry wage, and uses the average industry wage and employer payroll data to estimate person-years for each employer and each industry. One person-year is equivalent to one full- time worker working for one year, and can be assumed to equal 2,000 hours worked.
LTC Rate	The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-years estimates, and multiplying the result by 100. The LTC rate represents the probability or risk of disabling injury or disease to a worker during a period of one year's work. Comparisons of LTC rates between industries or between years, can be used to indicate increase, decrease or differences in this risk. $\text{LTC Rate} = \frac{\text{Number of LTCs} \times 100}{\text{Estimated person-years}}$
Duration (Days Lost)	The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Labour obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.
Duration Rate	The duration rate is calculated by dividing the number of work days lost(disability days) by the person-year estimate, and multiplying by 100. The result is expressed as 'days lost per 100 person-years worked', and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic costs. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims. $\text{Duration Rate} = \frac{\text{Disability Days} \times 100}{\text{Estimated person-years}}$
WCB Accepted Fatality	The death of a worker which results from work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.
NEC	Means 'Not Elsewhere Classified'
UNS	Means 'Unspecified'

APPENDIX B: ACSA 1997 Industry Codes

ACSA Partners in Injury Reduction(PIR) Groups	Industries
1. Drywall/Residential Construction	02100 - Landscaping Including Maintenance 40401 - Construction, Residential 42111 - Painting & Decorating 42113 - Tile & Terrazzo, Sale/Install 42115 - Paving Stone, Sale/Install 42125 - Floor Covering, Sale/Install 42133 - Cabinets/Counters, Asb./Install 42135 - Drywall, Plaster, Lath, Stucco, Etc. 42136 - Sprinklers, Underground, Asb./Install 42141 - Acoustic Materials, Sale/Install
2. Glaziers	30302 - Overhead Doors, Install/Repair 42121 - Glass/Door/Window, Mfg/Asb./Inst
3. Industrial Construction	40400 - Construction, Industrial 42104 - Construction, Concrete 42105 - Steel/Metal Structures- Erect 42106 - Steel, Structural- Erect 42109 - Mach/Equip. Heavy, Inst/Svce 42120 - Sand Blasting 42127 - Fence Sales, Rent, Install 42156 - Tanks/Storage - Erect/Dismtle 42159 - Caisson Ops. & Foundation Boring 42161 - Concrete, Precast - Erect 51504 - Cathodic Protection Services 62302 - Mach/Equip, NEC-Sale/Svce/Repair 86911 - Manpower Services- Industrial Labour 89401 - Welding 89605 - Service Station Equip., Supply/Svce
4. Masonry	42102 - Brick & Masonry - Construction
5. Mechanical/Electrical/Insulation	31508 - Overhead Cranes, Svce Only 42110 - Elevators/Escalators, Install/Repair 42117 - Heating System(HVAC)- Fab/Inst 42122 - Plumbing, Gas Fitting 42124 - Electric Wiring 42144 - Sprinklers, Fire - Inst/Svce 42169 - Plastic Pipe - Fusion 42184 - Insulation, Mech. - Inst/Svce 89600 - Refrigeration, Sale/Svce

APPENDIX ACSA Industry Codes (continued)

ACSA Partners in Injury Reduction(PIR) Groups	Industries
6. Roadbuilders	02200 - Right-of-Way Maintenance 34800 - Transit Mix Operations 40602 - Paving & Surfacing 40604 - Mobile Equip Ops & Road Const. 40901 - Power/Phone Line-Const/Remove 40905 - Construction, Pipeline 42103 - Drilling, Horizontal/Angular 42155 - Moving of Buildings
7. Roofers	42118 - Roofing 42139 - Industrial Coating Services 42151 - Siding/Eavestrough - Mfg/Inst
8. Scaffolders	89928 - Scaffold/Crane, Rent/Erect

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